What is claimed is:

1. An apparatus for timing recovery in a communication device, the apparatus comprising:

a first stage filter that filters and interpolates the received signal based on a plurality of predetermined coefficients to produce an interpolated signal;

a sampler in communication with the first stage filter that samples the interpolated signal based on a sampling period to produce a plurality of sampled signals;

a plurality of second stage interpolation filters, wherein each second stage interpolation filter of the plurality of second stage interpolation filters is coupled to the sampler and wherein each second stage interpolation filter receives a sampled signal of the plurality of sampled signals and interpolates the sampled signal based on at least one dynamically determined interpolation coefficient to produce a sampled and interpolated signal;

a spectrum spreading code sequence generator that generates a spectrum spreading code sequence;

a plurality of correlators, wherein each correlator of the plurality of correlators is coupled to the sequence generator and to a second stage interpolation filter of the plurality of second stage interpolation filters, and wherein each correlator receives a sampled and interpolated signal from a corresponding second stage interpolation filter, receives the spectrum spreading code sequence from the sequence generator, and applies the spectrum spreading code sequence to the sampled and interpolated signal to produce a despread signal;

a timing recovery loop in communication with the sampler and with each correlator of the plurality of correlators that receives a despread signal from each correlator and determines a timing error based on the received despread signals; and

wherein the sampler adjusts the sampling period based on the determined timing error.

2. The apparatus of claim 1, further comprising:

a plurality of despreaders, wherein each despreader of the plurality of despreaders is and is interposed between a correlator of the plurality of correlators and the timing recovery circuit, and wherein each despreader receives a despread signal from a

corresponding correlator and wherein each despreader uncovers the despread signal with an orthogonal code to produce an uncovered signal; and

wherein the timing recovery loop receives an uncovered signal from each despreader and determines a timing error based on the received uncovered signals.

3. The apparatus of claim 1, wherein the quantity of predetermined coefficients is greater than the quantity of dynamically determined coefficients.

4. The apparatus of claim 1, wherein the first stage filter comprises a pulse-shaping filter coupled to a half-band interpolation filter.

5. The apparatus of claim 4, wherein the half-band interpolation filter comprises a first half-band interpolation filter and wherein the input filter further comprises a second half-band interpolation filter cascaded with the first half-band interpolation filter.

6. The apparatus of claim 1, wherein each interpolation filter of the plurality of interpolation filters comprises a linear interpolator.

7. The apparatus of claim 1, further comprising a controller interposed between the timing recovery loop and the sampler, which controller conveys a control signal to the sampler that is based on the determined timing error.

8. The apparatus of claim 7, wherein the timing recovery loop further determines a timing adjustment signal based on the determined timing error and wherein the controller retards the sampling period when a value of the timing adjustment signal is greater than one (>1) and advances the sampling period when a value of the timing adjustment signal is negative.

9. The apparatus of claim 1, wherein the timing recovery loop comprises a second order transfer function.

10. The apparatus of claim 1, wherein the timing recovery loop comprises:

an error detector that determines a timing error in the sampling period and produces an error signal based on the determined timing error;

a loop filter coupled to the error detector that filters the error signal; and

a fraction extractor circuit coupled to the loop filter that determines the timing adjustment signal based on the error signal.

12. The apparatus of claim 1, wherein the timing recovery loop determines a value of the at least one dynamically determined coefficient based on the determined timing error.

13. The apparatus of claim 12, wherein the timing recovery loop comprises a fraction extractor circuit that produces the at least one dynamically determined coefficient based on the determined timing error.

14. The apparatus of claim 1, wherein each component signal processing unit comprises a Rake finger.

15. A method for timing recovery comprising steps of:

receiving a radio frequency signal;

interpolating the received signal based on a plurality of predetermined interpolation coefficients to produce an interpolated signal;

sampling the interpolated signal based on a sampling rate to produce a plurality of sampled signals;

interpolating each sampled signal of the plurality of sampled signals based on at least one dynamically determined interpolation coefficient to produce a plurality of interpolated and sampled signals;

determining a timing error based on the plurality of interpolated and sampled signals; and

adjusting the sampling rate based on the determined timing error.

16. The method of claim 15, wherein a quantity of predetermined filter coefficients is greater than a quantity of the at least one dynamically determined coefficient.

17. The method of claim 15, wherein the step of filtering the received signal comprises steps of:

interpolating the received signal based on a first plurality of predetermined filter coefficients to produce a first interpolated signal;

interpolating the first interpolated signal based on a second plurality of predetermined filter coefficients to produce a second interpolated signal; and

wherein the step of sampling comprises a step of sampling the second interpolated signal based on a sampling rate to produce a plurality of sampled signals.

18. The method of claim 15, further comprising a step of despreading each interpolated signal of the plurality of interpolated signals with a spectrum spreading code sequence to produce a plurality of despread signals and wherein the step of determining a timing error comprises a step of determining a timing error based on the plurality of despread signals.

19. The method of claim 15, further comprising a step of despreading each interpolated signal of the plurality of interpolated signals with each of a spectrum spreading code sequence and a orthogonal code sequence to produce a plurality of despread signals and wherein the step of determining a timing error comprises a step of determining a timing error based on the plurality of despread signals.

20. The method of claim 19, wherein the step of determining a timing error comprises a step of determining an error signal based on the based on the despread signals, and wherein the method further comprises steps of:

determining a timing adjustment signal based on the error signal; and

adjusting the sampling rate based on whether a value of the timing adjustment signal is positive or negative.

21. The method of claim 15, further comprising a step of determining a value of the at least one dynamically determined coefficient based on the determined timing error.

22. The method of claim 21, wherein the step of determining a timing error comprises determining an error signal based on the plurality of interpolated signals, and wherein the step of determining the at least one dynamically determined coefficient comprises steps of:

determining a timing adjustment signal based on the error signal;

determining a fractional part of the timing adjustment signal; and

determining the least one dynamically determined coefficient based on the fractional part of the timing adjustment signal.

23. A communication device comprising:

a receiving unit capable of receiving a spread spectrum signal, demodulating the received spread spectrum signal to produce a baseband signal, and sampling the baseband digital signal to produce a baseband digitized signal; and

a signal processing unit coupled to the receiving unit and capable of interpolating the baseband digitized signal based on a plurality of predetermined coefficients to produce an interpolated signal, sampling the interpolated signal based on a sampling period to produce a plurality of sampled signals, interpolating each sampled signal of the plurality of sampled signals based on at least one dynamically determined interpolation coefficient to produce a plurality of output signals, determining a timing error based on at least two output signals of the plurality of output signals, and adjusting the sampling period based on the determined timing error.

24. The communication device of claim 23, wherein the signal processing unit further is capable despreading each output signal with a spectrum spreading code sequence to produce a plurality of despread signals, and wherein the timing error is based on the plurality of despread signals.

25. The communication device of claim 23, wherein the signal processing unit further is capable of cross-correlating each output signal with each of a spectrum spreading code sequence and an orthogonal code sequence to produce plurality of despread signals, and wherein the timing error is based on the plurality of despread signals.

26. The communication device of claim 23, wherein a value of the at least one dynamically determined coefficient is based on the determined timing error.